

**What is claimed is:**

1. A flip chip assembly comprising:

an IC chip having a plurality of first solder bumps formed on a lower surface thereof ;  
and

5 a heat sink having a plurality of second solder bumps,

wherein the heat sink are attached to an upper surface of the IC chip via the second solder bumps.

2. The assembly as claimed in claim 1, wherein the heat sink is made of metal.

3. The assembly as claimed in claim 1, wherein the heat sink is a dummy chip without wiring  
10 formed therein.

4. The assembly as claimed in claim 1, wherein the IC chip has a plurality of pads each made of under bump metallurgy (UBM) on the upper surface thereof, and the second solder bumps of the heat sink are aligned with the pads of the IC chip.

5. The assembly as claimed in claim 1, further comprising an underfill formed between the IC  
15 chip and the heat sink.

6. A method for producing a flip chip assembly comprising the following steps:

providing an IC chip having a plurality of first solder bumps formed on a lower surface thereof;

providing a heat sink having a plurality of second solder bumps formed thereon;

20 placing the heat sink on the IC chip; and

reflowing the second solder bumps so as to attach the heat sink to the IC chip.

7. The method as claimed in claim 6, wherein the IC chip has a plurality of pads each made of under bump metallurgy (UBM) on an upper surface thereof, and the placing step includes aligning the second solder bumps of the heat sink with the pads of the IC chip.

25 8. The method as claimed in claim 6, further comprising the steps of:

forming an underfill between the IC chip and the heat sink; and

curing the underfill.

9. The method as claimed in claim 6, wherein the heat sink is made of metal.

10. The method as claimed in claim 6, wherein the heat sink is a dummy chip without wiring formed therein.

11. A method of forming a flip chip package attached on a substrate provided with a plurality of contact pads, the method comprising the following steps:

- 5            providing an IC chip having a plurality of first solder bumps on a lower surface thereof;  
             providing a heat sink having a plurality of second solder bumps formed thereon;  
             placing the IC chip on the substrate such that the first solder bumps of the IC chip is aligned with the contact pads of the substrate;  
             placing the heat sink on the IC chip; and

10            reflowing the first and second solder bumps so as to securely attach the IC chip to the substrate and securely attach the heat sink to the IC chip at the same time.

12. The method as claimed in claim 11, wherein the IC chip has a plurality of pads each made of under bump metallurgy (UBM) on an upper surface thereof, and the heat sink placing step includes aligning the second solder bumps of the heat sink with the pads of the IC chip.

15            13. The method as claimed in claim 11 further comprising the steps of:

- forming an underfill between the IC chip and the heat sink and between the IC chip and the substrate respectively; and  
             curing the underfill.

14. The method as claimed in claim 11, wherein the heat sink is made of metal.

20            15. The method as claimed in claim 11, wherein the heat sink is a dummy chip without wiring formed therein.